



Driving Policy on a Shifting Terrain

Understanding the Changing Policy Environment Amid 21st-Century Complexity



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“Policy issues today are more complex, more ‘horizontal,’ and, in many ways, more intractable than ever before. In today’s global information economy, every issue facing Canada has an international dimension, as well as a federal-provincial, municipal, local or Aboriginal perspective. On every issue, concerned citizens have a voice. There are many more players on the policy field today than in previous years, and this is a good thing. Governments must be receptive to ideas and inputs from many sources.”

Sixth Report of the Prime Minister’s
Advisory Committee on the Public Service:
Moving Ahead: Public Service Renewal in a Time of Change,
March 2012



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Executive summary

“Policy levers” refers to the tools, instruments and approaches used to compel change, to preserve key aspects of the status quo, or to maintain stability in accordance with societal values and public policy objectives. While many established government *policy tools or instruments*—such as regulation, taxation and spending—remain, an increasingly complex operating environment is altering how key societal actors—individuals, civil society organizations, businesses and governments—exert *leverage*.

Policy levers today are being redefined, as old instruments and methods are evolving rapidly and new policy levers are emerging. The winds of change driving this makeover of policy levers include:

- the proliferation of highly networked societies;
- blurring boundaries between societal actors; and
- digitization, mobile technology and “big” data.

These drivers are contributing to the proliferation of a host of emerging policy levers used by various societal actors, such as:

- **Co-creation and collaborative governance.** Actors are coming together to find new ways to address challenges they commonly face:
 - crowd-funding and -sourcing (tech-enabled ways of engaging populations to fund projects or achieve objectives);
 - place-based approaches (identification and solving of problems at the community level in collaboration with various actors); and
 - distributed authority (formal or informal delegation of authority to third or affected parties).
- **Innovation and experimentation.** Actors are experimenting to meet multiple societal objectives (e.g., social, environmental and economic), often simultaneously:

- innovation hubs (design and prototype interventions in, but not limited to, the public sector);
- social enterprise and impact investing (returns and objectives include social and environmental benefits); and
- transition management (managed and, often, collaborative experimentation for long-term socio-technical systemic change).
- **Behavioural change via insight and information.** New types of processes and activities are implemented, informed by insight into human behaviour and new types of information:
 - “nudges” (choice architecture alterations that make the pro-social choice easier);
 - prizes and gamification (use of game-play mechanics and rewards in non-game applications); and
 - open data (public release of data that were formerly proprietary or hard to access).
- **Global-to-local and local-to-global activities.** Grassroots activities affect the global level and vice versa:
 - supply chain procurement standards (private sector use of environmental and social standards in procurement);
 - international guidelines and standards (voluntary or mandatory disclosure and engagement around various codes of conduct); and
 - emissions trading (networks of CO₂ emissions trading regimes).

As the winds of change influence the levers that will be used in the future, key questions arise that may allow us to better address the challenges to come. As various levels of government and societal actors adapt and innovate policy in the public interest, how will they share accountability, risk and rewards? How deeply and quickly will digital technologies penetrate society? Will our policy frameworks be flexible and enough to respond?

Introduction

Policy levers refer to the tools, instruments and approaches used to compel change, to preserve key aspects of the status quo, or to maintain stability in accordance with societal values and policy objectives. While core levers—such as taxation, spending, regulation, persuasion and coordination—remain, the way these levers are used is evolving according to changing contexts. Such evolution is driven in part by the way in which societal actors—governments, businesses, civil society organizations (CSOs) and individuals—interact with each other to address issues they all face. Policy issues such as climate change, economic competitiveness, inequality and migration have always been complex. Driven by such complexity and enabled by advances in technology, a policy toolkit makeover is underway as actors explore new and alternative solutions to existing challenges.

What are the driving forces behind these changes and how may they evolve over the next 15 years? What are the emerging policy levers? How are the roles and responsibilities of governments, businesses, CSOs and citizens set to change? What are the implications for governments? These are questions explored in this foresight study.

Winds of change on the policy landscape

In a complex and globalized environment, the policy toolkit makeover will likely evolve as societal actors continue to interact with each other to achieve their objectives and to address the challenges they face. Countless interacting drivers will precipitate such adaptation. This study examines three key drivers that are pushing these changes to the forefront.



Networked “co-everything”

Around the world, individuals, organizations and governments are finding new ways to connect with each other, as the costs and benefits of transactions and interactions shift dramatically in light of new communication technologies and globalization. *Co-creation and collaboration* are set to be key words in the policy lexicon, as are *network* and *negotiated governance*. The ability to influence change will continue to shift across societal actors at the global, regional and national levels. Actors will continue to negotiate networks based on the influence each party can bring to the arrangement. Key relationships among all actors will be increasingly important (Yeung and Burke, 2012). As various actors in policy development, design and implementation take on new or different roles, a shift away from a government-centred structure will be evident. Citizens and consumers are circumventing hierarchies of all kinds more easily. They are increasingly taking their demands directly to the politicians and CEOs they want to reach, bypassing traditional intermediaries, such as government bureaucracies, the media and CSOs.

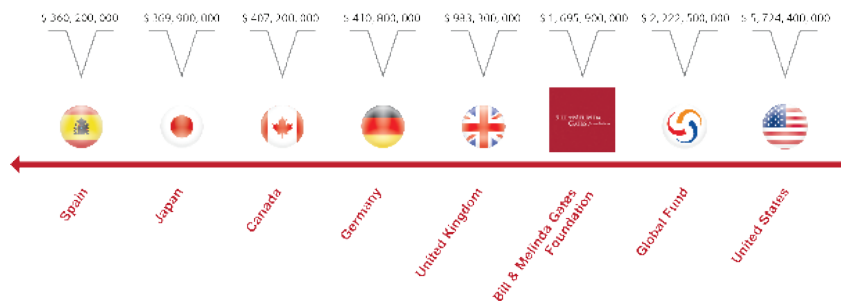
Blurring boundaries between societal actors

As transaction costs shift with new forms of governance, increasingly active societal actors are focusing their efforts in new ways, and changing the relationships and boundaries among firms, governments, individuals and CSOs. Increasing numbers of social enterprises have emerged as models of businesses that can generate revenue from the market and invest it for social purposes. This has led to the creation of new legal entities such as the **B-Corporation** (U.S.), the **Community Interest Company** (U.K.), and the **Community Contribution Company** or C-3 (British Columbia). This is blurring the boundaries between business and CSOs, challenging the way these entities are characterized, regulated and taxed. New forms of aid through **philanthrocapitalism**, as exemplified by the **Bill and Melinda Gates Foundation**—as well as initiatives by multinational corporations such as Grundfos' **LifeLink** system, which provides access

to clean water in developing countries—may alter international aid architecture in areas such as health. On the one hand, governments that provide international aid may benefit from the financial power of these foundations to complement their efforts. On the other hand, aid-receiving countries may choose to bypass traditional government aid agencies in favour of these large non-traditional organizations (Anderson, 2011).

Mistrust and scepticism can increase as these lines between societal actors blur and their actions are not necessarily connected to their primary motivation (e.g., profit for business, civic concerns for CSOs). Combined with the plummeting cost of information and demands for transparency, this affects how online reputations and consumer confidence are generated (Masum and Tovey, 2012). At the same time, private industries are setting standards to facilitate trade, such as Leadership in Energy and Environmental Design (LEED) standards. Though not

In Some Cases, NGO's Contribute More Than Entire Countries
INTERNATIONAL AID TO HEALTH (2009)



Source: OECD Aid to Health report (<http://www.oecd.org/dac/aidstatistics/49907438.pdf>)
All icons are used solely for reference purposes. Graphics in no way reflect endorsements or individual agendas.

based on government regulation, they comprise a highly valued certification for new buildings (Herman, 2012). The procurement requirements of large firms are emerging as a form of “private regulation,” compelling suppliers to meet these demands or risk exclusion from lucrative global supply chains (Vogel, 2009). While these private requirements are not enforceable by law, they do create informal market access issues.

Digitization, mobile technology and big data

Data has become a powerful tool in gathering behavioural intelligence. In addition to the proliferation of data, what was once considered technical and proprietary knowledge is now often freely available, affecting business lines and leading to a growing diffusion of power across societal actors. However, as the sources and users of data become more diffuse, competing interpretations of data are set to increase. As data access opens up, ownership of data becomes less clear, as does accountability for its accuracy, maintenance and protection. High volumes of online engagement by individuals are dividing populations into sub-niches based on personal interests or preferences. They are also leading to an “attention economy,” where businesses, governments and civil society actors compete for the attention of consumers and citizens whom they want to reach to achieve their objectives.

Different actors will continue to use behavioural intelligence as a key lever for different purposes, such as advertising, program delivery or policy development. Increasingly, mobile technologies will likely be the platforms through which this intelligence is generated and transmitted (Fogg and Eckles, 2007). More objects are now equipped with artificial intelligence, and sensors are capturing new types of information that affect human behaviour. **Predictive analytics** uses data on past behaviour to predict future behaviour and is being used—increasingly, in real time—by government, insurance, banking and medical professionals. Governments can determine future intervention points, for

example, by identifying irregular patterns of tax filing and then modelling for human behaviour management. Individuals may be able to save money by taking cues from their **wallets** telling them they have overspent or by programming their **refrigerator** to alert them when products are expiring.





“Think down the road 15 years and imagine how this will work. Through mobile technology, insurance companies will motivate us to exercise, governments will advocate energy conservation, charities will persuade us to donate time, and suitors will win the hearts of their beloveds. Nothing can stop this revolution.”

B.J. Fogg and Dean Eckles, 2007, p. 5

A policy toolkit makeover is underway: Emerging policy levers

Though not exhaustive, Table 1 offers a glimpse of the policy toolkit makeover currently underway, enabled by social media tools and the need to do things differently and more efficiently. (A more detailed description of the policy levers can be found in a later section of this report, “Supplementary information: Emerging policy levers and examples”. Readers are encouraged to expand that section by adding new examples).

Table 1: Emerging policy toolkit

	CO-CREATION AND COLLABORATIVE GOVERNANCE	
	<ul style="list-style-type: none"> • Crowd-funding and -sourcing • Place-based approaches • Distributed authority 	<ul style="list-style-type: none"> • Tech-enabled ways of engaging populations to fund projects or achieve objectives • Identification and solving of problems at the community level in collaboration with various actors • Delegation of authority to third or affected parties
	INNOVATION AND EXPERIMENTATION	
	<ul style="list-style-type: none"> • Innovation hubs • Social enterprise and impact investing • Transition management 	<ul style="list-style-type: none"> • Design and prototype interventions in, but not limited to, the public sector • Returns and objectives include social and environmental benefits • Managed experimentation for long-term socio-technical systemic change
	BEHAVIOURAL CHANGE VIA INSIGHT AND INTELLIGENCE	
	<ul style="list-style-type: none"> • “Nudges” • Prizes and gamification • Open data 	<ul style="list-style-type: none"> • Choice architecture alterations that make the pro-social choice easy • Use of game-play mechanics and rewards in non-game applications • Public release of data that were formerly proprietary or hard to access
	GLOBAL-TO-LOCAL AND LOCAL-TO-GLOBAL ACTIVITIES	
	<ul style="list-style-type: none"> • Supply chain procurement standards • International guidelines and standards • Emissions trading 	<ul style="list-style-type: none"> • Private sector use of environmental and social standards in procurement • Voluntary disclosure and engagement around various codes of conduct • Networks of CO₂ emissions trading regimes



Tackling complex issues is inherently a team effort

“Negotiated governance” is gaining traction as governments, businesses and civil society increasingly recognize the complexity of the challenges they face (Bellefontaine, 2012). Collaboration and co-creation of solutions becomes an important lever, accelerated by advancement in network-enabled technologies. Many of these networks are initiated or led by non-state organizations or individual citizens, as seen in the Grand Challenges initiative spearheaded by the Gates Foundation. Another example is the **Canadian Index of Wellbeing (CIW)**. Based at the University of Waterloo, CIW is an independent network of Canadian and international experts that monitors Canada’s well-being and promotes evidence-based policy development.

In addition to seeking funding from government or non-government sources, entities and individuals can raise funds via crowd-sourcing, through **Kiva**, **Kickstarter** and similar organizations. The U.S. Senate’s **Crowdfund Act** passed both chambers of Congress in March 2012 and was signed into law by President Obama in April 2012. It allows small investors to pull resources together to **fund promising projects**, allowing companies to raise \$1 billion annually through crowd-funding on registered websites.

In their efforts to seek holistic solutions to societal issues, national governments are increasingly engaging other societal actors in collaborative policy-making and dialogue. Through its Welcoming Communities Initiative, Citizenship and Immigration Canada funds and collaborates with consortiums of immigrant settlement organizations to help newcomers adjust to life in Canada. Foreign Affairs and International Trade Canada is experimenting with an open policy development model that seeks to break down silos, share knowledge, and leverage ideas and resources from outside, with all of this being facilitated by the use of new collaborative technologies. Iceland just crowd-sourced its constitution and Germany will conclude

its government-led **Dialogue on Germany’s Future** in September 2012. Similarly, in 2001, the Netherlands adopted the Transition Approach to addressing sustainable development, an interdepartmental, multi-stakeholder collaborative effort (Veilleux, 2010).



Innovation and experimentation are more than just buzz-words

Governments are using experimental innovation labs to design and test policy and program prototypes; examples include **Denmark’s MindLab**, **Australia’s Centre for Excellence in Public Sector Design** and the **branding campaign** launched by the U.S. government’s Office of Personnel Management to attract new recruits. The **Behavioural Insights Team** in the U.K. Cabinet Office has applied behavioural insights (with varying degrees of success) to **reduce fraud** and to encourage healthy behaviour, while California has launched similar efforts to encourage **recycling and energy-saving** (Dobson, 2012). The **U.K.** and **Canada** are experimenting with alternative funding mechanisms, such as social impact bonds.

The concept of social innovation has attracted significant attention as a way to address multi-faceted societal challenges that appear to resist existing interventions by families, communities and governments (Policy Research Initiative, 2010). Centres of social innovation are turning up in Canada and abroad. International networks such as the **Social Innovation Exchange** bring together innovators from all sectors around the globe to share ideas and learn from each other. Like national governments, provincial and state governments are also establishing innovation labs. In Canada, for example, British Columbia established its **BC Social Innovation Council** in 2011 and the **Government of Ontario** supports social innovation in a number of ways. For instance, it crowd-sourced a policy paper on social innovation and sponsors innovation through the **Ontario Centres of Excellence**.



Behavioural change requires insight and intelligence

Policy tools and instruments often aim to change behaviours. Regulations and financial incentives remain important tools, appealing to rational human motivations to make choices favourable to one's well-being. That said, as demonstrated by behavioural economists, when it comes to decision-making, human beings often behave more like the emotional and fallible Homer Simpson on *The Simpsons* than the hyper-rational and wise Mr. Spock on *Star Trek* (Ariely, 2010). Consequently, there is growing interest in understanding the hidden forces of human decision-making in order to design policies to “nudge” individuals to act in a socially, economically and environmentally responsible manner (De Civita, MacDonald, and Downs, 2011). In addition to the U.K.'s Behavioural Insights Team, Denmark's **Nudging Network** is another forum for policy-makers, practitioners and researchers to share and experiment with initiatives using behavioural insights.

Similarly, many societal actors are embracing *gamification*—the use of game play mechanics and rewards (MacDonald, 2012). Examples include the Agriculture and Agri-Food Canada-sponsored **Invitational Drought Tournament** (an interactive game to help institutions prepare for droughts), Richard Branson's **X Prize** for climate-saving technologies and the UN's **Food Force** video game.

created networks such as **Local Governments for Sustainability** (formerly the International Council for Local Environmental Initiatives) and the **Regional Greenhouse Gas Initiative** in the north-eastern and mid-Atlantic states in the U.S. Quebec and California are planning to link their **cap-and-trade carbon programs**. It is projected that 34 emissions-trading programs will start internationally by 2013 (Cheeseman, 2012).

Fair Trade towns, schools and communities are growing around the world, in which organizations and individuals commit to buying products produced in a sustainable and equitable manner. Due in part to many people having become discontented with the economy and conventional financial institutions since the financial crisis, community micro currencies are popping up around the world as an alternative way to purchase goods and services. It is estimated that there are more than 5,000 micro or complementary currencies worldwide, with the purpose of establishing value in a particular location (Martignoni, 2012). While they are not meant to replace the global financial system, if these micro currencies catch on, they could have implications for taxation and revenue, as well as the way we interact with each other (Garland, 2012).



New global and local realities are emerging

In a global supply-chain economy, what is local is often global. As public values related to social, economic and environmental sustainability evolve over time, so too do the ways in which public institutions respond to changes. Increasingly, sub-national actors, acting individually and with like-minded partners, are coming together to address issues of common interest. This is particularly evident in environmental and economic initiatives, where sub-national governments have

Policy actors are adapting and innovating

Technological advances, fiscal constraints and the intractability of many persistent issues are spurring people to do things differently, setting the stage for innovations by all societal actors. Governments, businesses, civil society organizations and individuals may act alone, but they often come together through formal or informal governance arrangements. As these societal actors adapt existing tools and approaches, or seek out new ones to tackle the issues they commonly face, they are transforming the policy landscape, as well as their roles and interactions within it.

Table 2: Social actors adapting to change

Individuals	The way individuals connect with each other is changing rapidly with the increasing number of (often virtual) exchanges and with the ability to point, click and act in any number of spaces. Collaboration is increasing outside—or in addition to—formal policy spaces.
Civil society organizations	Faced with a declining volunteer base and fewer donor dollars, many CSOs are looking for new ways to meet their civic or charitable purposes. Many are experimenting with becoming social enterprises, supporting their social mission through income generated in the marketplace.
Businesses	While creating value for shareholders remains a primary objective, businesses are using market solutions to social and environmental challenges to carry out a mandate of corporate social responsibility.
Governments	Governments around the world are experimenting with new ways of engaging citizens, promoting transparency, and reaching out to citizens at home and abroad. Less reliance on regulation and more support for innovation centres are also key emerging trends.

Individuals: Information pro-sumers

Digital technologies have changed the ways that people relate to the world around them. Reliable, high-quality information is much easier to obtain, and individuals are less dependent on institutions to get it. And while people have always had opinions on issues that matter to them, this ubiquitous flow of information helps them develop and express their preferences, wants and needs, as it is easy for anyone to be an “information contributor.” Whether they are posting online comments to praise or criticize products, or to rate hotels, teachers or services, with the range of social media tools and information at their disposal, individuals can foster the changes they want to see by engaging with each other and institutional actors.

Moreover, in addition to learning and expressing ideas, individuals are collaborating online. A simple Internet search on “online collaboration” returns thousands of hits, including many links to software developers who have recognized the fundamental human desire to get involved. This is truly a global phenomenon; whether it is an online petition protesting the harmonized sales tax in British Columbia (see text box), or initiatives to report and map violence and peace efforts in Kenya, people are affecting change by producing and consuming information together.

B.C. HST

In July 2009, the British Columbia government announced that a harmonized sales tax (HST) would replace the existing federal goods and services tax and provincial sales tax in the province. A rapid and negative public response ensued, with anti-HST rallies starting in September of that year. Before citizens voted down the HST in August 2011, online petitions were signed, politicians resigned or retired due to the public backlash, and a referendum was called. The ease with which citizens could voice and share their opinions was a driving force behind toppling the HST in British Columbia.

Through its “Barbie, It’s Over” campaign, Greenpeace raised public awareness of the issue of toy company Mattel making packaging from endangered rainforest species and areas. The campaign was effective; Mattel changed its policies and processes in response to the negative media portrayal.

“Barbie, It’s Over! I Don’t Date Girls That Are Into Deforestation,”
October 12, 2011,
unclutteredwhitespaces.com

Civil society organizations: Beyond social benefit

Generally motivated by a civic or charitable purpose, CSOs are consistently the most trusted institutions globally (Edelman, 2012). However, many are experiencing a declining volunteer base and operating with fewer donor dollars (Policy Horizons Canada, 2010). Other forms of funding, such as **impact investing**, **social finance** and **community bonds**, are also emerging. Social impact bonds are generally backed by government contracts contingent on achieving program results, which changes the risk profile for CSOs and investors.

Advocacy groups are engaging in increasingly sophisticated online campaigns that have the potential to gain momentum through mass social media participation. This has empowered CSOs to critique governments and businesses, changing the brand risk for corporations. For instance, Greenpeace launched a social media campaign called **Barbie, It’s Over** related to Mattel’s use of rainforest pulp. The ease with which organizations can publicly challenge corporations (“naming and shaming”) serves a pseudo-regulatory oversight function, which could help ensure that other organizations adhere to moral or ethical standards.

Businesses: Beyond economic benefit

Businesses continue to create value using a classical profit motive with some new twists. Take, for example, Loblaw Companies Limited (LCL), a Canadian grocery retailer. In 2012, it introduced the **Guiding Stars** program, an innovative nutritional guide, in its Ontario stores to help customers make shopping choices. In 2009, it made a **commitment** to source 100 percent of all the wild and farmed fish in its stores from sustainable sources by 2013 by working with the **Marine Stewardship Council**. The lack of global regulation and the size of some businesses, such as Walmart and LCL, are bringing a whole new meaning to **supply chain pressure, self-regulation and third-party certification models**. Consumers and investors are exerting new influences as well. Coupled with the emergence of new competition in the form of social enterprise, these are putting pressure on businesses to create and demonstrate community benefits (see, for instance, the **Ottawa Social Purchasing Portal** and the **International Green Purchasing Network**). This has resulted in new metrics for investors, such as the **Global Impact Investment Rating System**, as well as interest in **green branding**, and efforts to integrate environmental and social considerations into traditional balance sheets, such as Puma's **environmental profit and loss statement**.

"The Social Purchasing Portal (SPP) is an innovative partnership of business, government, and community working together on social and economic issues to create healthy communities. It facilitates corporate purchasers to target their everyday business purchasing to suppliers who have agreed to consider creating job opportunities for individuals who require further support to enter the workforce. Ottawa businesses and social organizations have developed this Internet portal to facilitate supply chains that create social value."

Ottawa Social Purchasing Portal
(<http://spp-pcsottawa.ca/en/>)

One example of a shared regulatory role is Ontario's regulation of health professions. Based on a self-governance model, 21 health regulatory colleges governing 23 health professions under the Regulated Health Professions Act operate at arm's length from the provincial government and independently administer their internal processes.

ServiceOntario, Regulatory Registry
(<http://www.ontariocanada.com/registry/home.jsp>)

Governments: From consultation to collaboration

Governments remain a key player in innovation by other actors by providing financial support for initiatives such as the **ThingTank Lab** and Toronto's **MaRS Discovery District**. In addition to the targeted innovations and experiments mentioned earlier, new ways of engaging the public have emerged, including public dialogues; open policy initiatives on specific topics, such as trade and immigration; and participatory budgeting, which has spread to numerous communities around the globe, including places in Brazil, Canada, the U.K. and the U.S. Governments are also increasingly sharing or transferring parts of their regulatory roles to arm's-length organizations, such as professional associations. Moreover, government decision-making processes are becoming more transparent and government-generated data more accessible, enabling others to use the information to create public or private goods.

In addition to connecting with citizens in their home countries, governments can use social media tools to reach out internationally through their missions abroad. Canada's consulate in San Francisco supports the **C100**, a network of Canadian technology companies in Silicon Valley that offers mentors and partners, and invests in emerging Canadian companies in the area. Through Weibo—the popular Chinese social media platform—the Canadian embassy in Beijing communicates directly with Chinese Internet users through its "Canadaweibo" account, launched in June 2011 (Campbell, 2012). In December 2011, Sina.com (a popular website in China) gave the embassy an **award** at its education gala for its contribution to educational and cultural exchange.

Putting new levers to use: Some considerations for government

How can policies be developed in a networked world where collaboration is a necessity and the roles of societal actors evolving? How can governments maximize the impacts of digitization? This section identifies some policy challenges and their implications.

Sharing accountability, risk and rewards in a “co-everything” environment

Policy development, while responding to ever-more complex and challenging public concerns, is becoming a team sport—and government is not always the captain of the team. As a result, all levels of government will likely need to develop relationships with other actors to help achieve objectives. In light of these new arrangements, will accountabilities, risks and rewards be informally shared on an ad hoc basis, or will they be negotiated among actors within a binding framework? Can formal networks organize and function fast enough to respond to public needs?

The roles and identities of actors will continue to shift, both domestically and internationally, somewhat muddying the policy landscape. Government, CSO and business roles and initiatives will overlap. While governments have the ultimate authority to develop and enforce laws and regulations, they need to consider how to position themselves in a network of actors. The regulatory capacity of governments will remain essential. However, in a global economy, they will likely face new pressures to respond to new challenges while maintaining oversight. CSOs could hold the balance of power in this equation, providing third-party monitoring and verification.

Key policy questions

- Will networks be resilient enough to respond to issues as they become more complex?
- Will partners have the capacity to work in multiple networks and stay engaged?
- Will governments need different mechanisms to participate in networks?
- What is the role of governments in facilitating and supporting collaborative governance?

Remaining agile, flexible and innovative as the boundaries blur

In a perfect world, with clearly defined boundaries between societal actors, policy frameworks and levers might also be straightforward to identify and apply. However, as discussed previously, those lines are blurring; consequently, the levers available to any one actor may also be less clear. Looking to the future, it is unlikely that the policy environment will be any simpler than it is today. So how will governments adapt? Will policy frameworks evolve and support greater transparency and accountability, and can that occur quickly enough to keep pace with technology (Bowles, 2012)? Similarly, can the strengths of CSOs or private sector organizations be taken into consideration, giving them room to use their best abilities?

Governments and other societal actors will need a degree of agility and innovation to adapt to these new challenges and opportunities. But agility and innovation do not always come easily for governments; it has been argued that governments often find it difficult to end policies and programs in which they have invested significantly, even if those initiatives have outlived their usefulness (Mulgan, 2009). However, the shifting policy terrain can create unpredictable shocks that may extinguish years of work while opening new opportunities (Room, 2011). For all the planning that can be done, governments also need to anticipate and react to

unintended consequences and work with other societal actors. In times of crisis, decision-makers must balance the need for immediate response with measured consideration. Creating policy that can adapt to evolving situations, unique contexts and conflicting objectives will become increasingly important for government.

The need for quick responses will challenge the ability of governments to test the effectiveness of policy instruments. Policies and programs are generally expensive, with potentially unpredictable outcomes. Yet, governments need to be accountable for the appropriate use of public funds by demonstrating tangible results of their investment. The challenge for governments will lie in surveying fast-moving ground to ensure policy instruments are poised to perform as expected, balancing the needs for quick response and measured consideration. Experiments—including small-scale policy interventions, gamification and modelling—are therefore indispensable tools for testing the potential effectiveness of interventions. As a result, governments need to continue to expand their expertise in evaluation approaches that will help them improve and adapt their interventions (Bellefontaine, 2011).

Key policy questions

- How can a network of multiple actors, working with government, help to develop flexible and responsive policy frameworks?
- What will be the role of governments in a crowded policy marketplace?
- How will governments play off their own strengths and those of other actors?

Maximizing and leveraging the benefits of digitization

New communication tools and artificial intelligence-enabled technologies are changing at a staggering pace. But how much of society will adopt these advances, and how quickly?

The next 15 years will see Generation C enter the labour market. This generation comprises those born after the 1990s, who are “connected, communicating, content-centric, computerized, community-oriented and always clicking” (Friedrich et al, 2010:2). The arrival of Generation C, coupled with the increasing accessibility of digital technologies worldwide, is expected to accelerate the process of digitization—“the mass adoption of smart and connected ICT by consumers, businesses, and governments” (Friedrich et al., 2012:2). Governments and businesses will continue to adapt their existing policies and approaches to maximize the social and economic benefits of digitization (Sabbagh et al., 2012; Friedrich et al., 2012).

Why should governments and businesses strive to boost digitization? Evidence has shown that advanced levels of digitization create three types of benefits: economic (economic growth, reduced unemployment), social (improved quality of life, access to public services) and political (more transparent and efficient governments) (Sabbagh et al., 2012). Advanced digitization creates new forms of data (e.g., self-tracking) and new trends in data, such as open data, data visualization and the linking of data sets to support integrated analysis. All of the benefits could support policy objectives, but there will be implications for privacy and behaviour.

What are the implications for governments? Harnessing this technological power could help them parse complexity and build resilience in the face of increasingly difficult issues. Will governments be ready to maximize the potential of tech-savvy and networked Generation C? How will governments manage intergenerational differences? Digital

technology could be used for social cohesion or for social disruption. Engaging others and seeking their contribution is itself a lever for achieving results. When people feel a sense of ownership, their increased stake encourages positive outcomes. Nevertheless, blurred roles could actually increase unforeseen consequences, with uncoordinated actions by different actors conflicting with and counteracting one another. Will governments have the appropriate levers to manage issues associated with digitization (Horizons, 2011)?

Key policy questions

- What is the role of governments in making sense of the plethora of information in the digital age?
- Will governments be able to manage intergenerational differences?
- How can governments maximize the benefits of digitization while managing potential unintended consequences?
- Will governments be able to leverage social media tools to support networks to achieve public good?

Concluding thoughts: It's all about embracing complexity

With the winds of change blowing, how will societal actors continue to move across this shifting policy and decision-making terrain, exploring new ways of achieving results? The societal challenges of the 21st century are not getting any easier, and the speed at which they are presenting themselves is not decreasing. Creative and rapid responses are essential, and these become more realistic as the world embraces collaborative approaches facilitated by evolving technologies. How will governments around the world respond to the changing conditions? Great opportunities exist to explore innovative avenues. Governments that can leverage

social tools to co-create policies with other actors may reap the rewards associated with more engaged citizens.

Managing in a complex context requires fostering interactive dialogues, setting boundaries for these exchanges while encouraging diverse perspectives, and creating an environment for opportunities to emerge (Snowden and Boone, 2007). This foresight study suggests what the policy world may be like in the coming years and how societal actors may respond to the various contexts. Some things we can be confident about.

- Network-enabled technology growth will continue to reduce transaction costs and barriers among citizens, stakeholders and governments.
- As societal challenges are increasingly multi-causal, transcending sectors and jurisdictions, simulation and experimentation will help stakeholders test options and explore alternatives.
- Technology and media globalization make local issues more visible and global.
- Sub-national actors will act individually and with like-minded partners, regardless of each one's position on the global stage.

The degree to which factors such as technology, human preferences and governance models change will ultimately decide the outcomes.

Supplementary information: Emerging policy levers and examples



Lever	Description	Examples
CO-CREATION AND COLLABORATIVE GOVERNANCE		
Crowd-sourced funding	Small amounts of money provided by large numbers of people, often before a product is made or an initiative is launched	<ul style="list-style-type: none"> • Kiva • Kickstarter
People as sensors	Citizens contributing information (e.g., local environmental data points) through new technology and providing context (e.g., current events)	<ul style="list-style-type: none"> • Nature's Notebook • Small World News • Ushahidi • Pothole Alert App • Cornell Lab of Ornithology
Government crowd-sourcing	Government's collaborative engagement of the grassroots, often facilitated by new technology, to generate content and build social capital	<ul style="list-style-type: none"> • Challenge.gov (United States) • Dialogue on Germany's Future • Iceland's constitution • European Citizens' Initiative • Citizenship and Immigration Canada consultation on immigrant investment program
Electronic voting and direct democracy	Electronic voting for representatives (both in-person and online) and more direct forms of democracy (e.g., petitions, referendums)	<ul style="list-style-type: none"> • Elections Canada (online voting) - assessment • California (direct democracy) • Switzerland (direct democracy) • Stratford, Ontario (online voting) • We the People (United States government petition) • Avaaz (civil society petition) • MoveOn (civil society petition)
Distributed authority	Formal delegation or allocation of governmental authority to third parties or directly to affected parties, which then implement and/or monitor standards	<ul style="list-style-type: none"> • International Organization for Standardization (ISO) • Organic regulations administered by third parties • Travel Industry Council of Ontario • European Union presumption of conformity label (CE mark)

Lever	Description	Examples
Participatory budgeting	Involving citizens in the local budgeting process, ensuring public resources are allocated in an equitable manner	Some cities and communities in a number of countries including: <ul style="list-style-type: none"> • Participatory Budget Unit (U.K.) • Porto Alegre (Brazil) • Various communities in Canada
Place-based approaches	Community-based collaborative approaches to identifying and solving problems; although intended to be holistic, they often address specific issues, such as poverty, crime, health or the environment	<ul style="list-style-type: none"> • Vibrant Communities (Canada) • Action for Neighbourhood Change (Canada) • Urban Aboriginal Strategy (Canada) • Welcoming Communities Initiative (Canada) • Alberta Climate Dialogue • Whistler's Integrated Community Sustainability Plan • Don't Flush Me Project (New York City) • Sustainable Conversations
Adaptive approaches	Approaches to engaging the community in reconciling environmental, social and economic interests within a natural catchment area	<ul style="list-style-type: none"> • Lake Taupo (New Zealand) • Room for the River Programme (Netherlands) • Tobacco Creek watershed (Canada) • Sustainable proteins (Netherlands) • Low Carbon Transition Plan (U.K.)



Lever	Description	Examples
INNOVATION AND EXPERIMENTATION		
Innovation hubs	Collaborative places where stakeholders with diverse perspectives engage in a workshop process to understand complex problems, and design new approaches and solutions	<ul style="list-style-type: none"> • MindLab (Denmark) • Behavioural Insights Team (U.K.) • Various innovation hubs in Ontario • NASA Center of Excellence for Collaborative Innovation (U.S.) • Office of Personnel Management (U.S.) • Centre for Excellence in Public Sector Design (Australia) • Social Innovation Labs (BC) • Strategic Innovation Lab (OCAD University, Toronto) • European Design Leadership Board • Foreign Affairs and International Trade Canada open policy initiative
Social finance and impact investing	Investment opportunities offered to private sources by non-profit organizations and businesses that provide blended returns (social, economic, environmental); in some cases (e.g., social impact bonds), the return on investment is based on results achieved and can be back-stopped by government contracts	<ul style="list-style-type: none"> • Community Economic Development Investment Funds (Nova Scotia) • Social impact and Community bonds • Social Capital Partners (Canada) • Social Venture Exchange (Canada) • Social Stock Exchange (EU) • Global Impact Investment Rating System
Social enterprise	An entity that generates income by offering its services and/or products in the marketplace while simultaneously creating social, environmental and cultural value	<ul style="list-style-type: none"> • B Corps (U.S. and global) • Community contribution companies (British Columbia) • Community Interest Companies (United Kingdom)
Complementary currencies	Local money systems that are unsupported by national constitutions or central banks	<ul style="list-style-type: none"> • Calgary Dollars • Brixton Pound • Virtual currencies (e.g., Bitcoin, Facebook credits) • Ithaca Hours
Transition management	Managed experimentation for long-term socio-technical systemic change	<ul style="list-style-type: none"> • Energy Transition Approach (Netherlands)



Lever	Description	Examples
BEHAVIOUR CHANGE THROUGH INSIGHT AND INFORMATION		
Nudge	Altering choice architecture to influence people's behaviour without forbidding choices or altering financial incentives—through, for example, defaults, prompts, community norms and public commitments	<ul style="list-style-type: none"> • iNudgeyou (Denmark) • Reducing fraud, error and debt (U.K.) • Fostering Sustainable Behavior (Community-Based Social Marketing) • "Prompted choice" organ donation (U.K.)
Gamification	The use of game-play mechanics and reward motivation in non-game applications	<ul style="list-style-type: none"> • Invitational Drought Tournament (Canada) • Bant (app to monitor and reward diabetics) • Games for Change • Food Force (humanitarian video game) • Natural Resources Canada Science Policy Challenge • Speed Camera Lottery (Stockholm) • World Without Oil • SuperBetter (game to improve resilience) • Superstruct • Recyclebank
Prizes	Rewards offered to those who meet a defined challenge	<ul style="list-style-type: none"> • Nesta, Centre for Challenge Prizes (U.K.) • Gates Foundation Grand Challenges Explorations • Dell Social Innovation Challenge • X Prize • GE Healthcare's "Get Fit" competition
Philanthrocapitalism	The provision of social services by large-scale private philanthropists and corporations using business approaches	<ul style="list-style-type: none"> • Bill and Melinda Gates Foundation • Clinton Global Initiative • Grundfos LifeLink

Lever	Description	Examples
Data mining	The use of consumer and organizational data to predict future behaviour, and to anticipate risk and possible intervention points	<ul style="list-style-type: none"> • Predictive analytics • Brain imaging • Spatio-temporal behavioural data mining • Web mining • Facial detection advertising
Open data	A movement to open data sources and government information for public access and use	<ul style="list-style-type: none"> • Government of the United States • Government of Canada • Government of New Zealand • Citizen Centric Reporting Initiative (U.S.) • Open Government Partnership • World Bank



GOING GLOBAL WHILE STAYING LOCAL

Supply chain pressure and "green" procurement	The increasing procurement, operation, and disposal of assets and operations in a way that protects the environment and supports sustainable development	<ul style="list-style-type: none"> • Bridgehead (Canada) • Ontario school green procurement program • Government of Canada's Policy on Green Procurement • International Green Purchasing Network • Social Purchasing Portal (Ottawa) • Walmart • Fairtrade International • Local Governments for Sustainability • Barbie, It's Over (Greenpeace social media campaign against Mattel)
Third-party certification	The process through which an outside organization verifies the social, environmental and/or economic performance of a product, process or entity	<ul style="list-style-type: none"> • Fairtrade International • U.S. Green Building Council Leadership in Energy and Environmental Design • Forest Stewardship Council • Marine Stewardship Council • Auditing firms (e.g., KPMG, Deloitte) • Best Global Green Brands 2012

Lever	Description	Examples
Lifecycle assessment	An ISO-standardized methodology for assessing the environmental inputs and impacts of a product, process or technology from cradle to cradle	<ul style="list-style-type: none"> • CIRAIG (Quebec) • National Renewable Energy Laboratory (U.S.) • Joint Research Centre (European Commission)
Emission trading agreements	Regional cap-and-trade agreements, with a recent example of an agreement by sub-national actors in different regions (Québec and California)	<ul style="list-style-type: none"> • Quebec/California agreement • EU Emissions Trading System • Australian Carbon Traders • New Zealand Emissions Trading Scheme (carbon and nitrogen) • Regional Greenhouse Gas Initiative (U.S.)
International guidelines and standards	Voluntary performance and reporting standards for multinational firms	<ul style="list-style-type: none"> • International Finance Corporation Performance Standards • Equator Principles • Voluntary Principles on Security and Human Rights • Canada's National Contact Point for the OECD Guidelines for Multinational Enterprises • Global Reporting Initiative
Corporate social responsibility	The effort by businesses to meet social, environmental and other goals as well as economic ones	<p>Corporate Sector Regulation</p> <ul style="list-style-type: none"> • Financial Statements Act (Denmark) • Grenelle II Act (France) • King III report (South Africa) <p>Voluntary</p> <ul style="list-style-type: none"> • Disney Magic of Healthy Living • Puma Environmental Profit and Loss Statement • Canadian Tire (business sustainability) • Carbon footprint labelling

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Annex 1: Engagement process

This foresight study is the result of a collaborative exercise that engaged a wide cross-section of experts through interviews, workshops and various other engagement sessions between December 2011 and May 2012. The purpose of the engagement was to identify and challenge assumptions, examine insights and change drivers, and explore plausible scenarios related to policy levers. Policy Horizons Canada would like to thank all participants for graciously providing their time, energy and ideas. Please find below the list of experts engaged throughout this process.

Interviewees (alphabetical order)

1. Wiktor Adamowicz, University of Alberta, January 24, 2012
2. Dan Ariely, Duke University, April 4, 2012
3. David Autor, Massachusetts Institute of Technology, January 12, 2012
4. Perrin Beatty, Canadian Chamber of Commerce, March 9, 2012 (cross interview with the Next Economy)
5. Sam T. Boutziouvis, Canadian Council of Chief Executives, February 28, 2012 (cross interview with the Next Economy)
6. Michael Buda, Federation of Canadian Municipalities, February 9, 2012
7. C. Scott Clarke, formerly deputy minister of the Department of Finance, March 9, 2012 (cross interview with the Next Economy)
8. Stephen Clarkson, University of Toronto, March 23, 2012 (cross interview with the Next Economy)
9. Ken Coates, Rural Innovation, December 22, 2011 (cross interview with the Next Economy)
10. Aftab Erfan, University of British Columbia, March 8, 2012
11. Catherine Fieschi, Counterpoint UK, February 23, 2012
12. Giles Gherson, Ontario Ministry of Consumer Services, February 14, 2012
13. Katherine Graham, Carleton University, February 17, 2012
14. David Halpern, Government of the United Kingdom, April 4, 2012
15. Michael Howlett, University of British Columbia, December 21, 2011
16. Frances Lankin, formerly of the United Way of Greater Toronto, March 14, 2012
17. Avrim Lazar, Forest Products Association of Canada, February 15, 2012
18. Matt Leighninger, Deliberative Democracy Consortium, March 20, 2012
19. Evert Lindquist, University of Victoria, January 12, 2012
20. Peter MacLeod, MASS LBP (consulting firm), February 6, 2012
21. Peter Milley, Canada School of Public Service, January 17, 2012
22. David Mitchell, Public Policy Forum, January 16, 2012
23. John Moffet, Environment Canada, February 17, 2012
24. Robert Page, University of Calgary, February 3, 2012
25. Michael Presley, Treasury Board of Canada, Secretariat, January 24, 2012
26. Graham Room, University of Bath, April 19, 2012
27. Lester Salamon, Johns Hopkins University, March 30, 2012
28. M. Scott Taylor, University of Calgary, February 3, 2012
29. Scott Vaughan, Office of the Auditor General, Commissioner for the Environment and Sustainable Development, March 16, 2012
30. Liz Weaver, Tamarack, February 10, 2012
31. Armine Yalnizyan, Canadian Centre for Policy Alternatives



Engagement group (alphabetical order)

1. Adler Aristilde, Canadian International Development Agency
2. Bruno Bond, Natural Resources Canada
3. Carrie-Ann Breckenridge, Human Resources and Skills Development Canada
4. Michael Burt, Conference Board of Canada
5. George Claydon, Infrastructure Canada
6. André Downs, Foreign Affairs and International Trade Canada
7. Jeff Frank, Human Resources and Skills Development Canada
8. Brad Gilmour, Agriculture and Agri-Food Canada
9. Judith Hamel, Environment Canada
10. Terry Hunsley, Canadian Council on Social Development
11. Stelios Loizides, Western Economic Diversification Canada
12. Francois Massé, Privy Council Office
13. Anthony Michel, Canadian Heritage
14. David Moorman, Canadian Foundation for Innovation
15. Anthony Muttu, Human Resources and Skills Development Canada
16. Danielle Provencher, Justice Canada
17. Rachel Samson, Environment Canada
18. Jennifer Simms, Industry Canada
19. John Verdon, Defence Research and Development Canada, Department of National Defence